

# Grade 4 Wendy's Windows Math Rubric

## 2015-2016 NYC End-of-Year Performance Tasks

### Instructions

- The following page(s) contain the rubric to be used for the scoring of the above-named NYC Performance Task.
- The rubric is intended to be used in conjunction with the Scoring Guide for this task, which provides annotated samples of student work scored against the rubric.
- If the above-named NYC Performance Task is being administered for evaluative purposes, the End-of-Year task may be administered by the regular classroom teacher but **may not be scored** by the regular classroom teacher.
- All student work should be completed in the task booklet. All student work in the task booklet should be scored, regardless of whether the student completed or attempted every question.
- All scores should be recorded on the appropriate answer sheet.
- For assistance with scanning answer sheets, see the MOSL Assessment Administration Handbook.

	4 Points	3 Points	2 Points	1 Point	0 Points
<b>T1</b> <b>Trait 1</b> 4.OA.2 (Q1)			<ul style="list-style-type: none"> <li>The student gives two of two correct answers, 16 feet <i>and</i> 6 times.</li> </ul>	<ul style="list-style-type: none"> <li>The student gives one of two correct answers, 16 feet <i>or</i> 6 times.</li> </ul>	<ul style="list-style-type: none"> <li>Makes no attempt or answers incorrectly.</li> </ul>
<b>T2</b> <b>Trait 2</b> 4.MD.3 (Q2)			<ul style="list-style-type: none"> <li>The student gives the correct answer, 18 feet. ----- <i>and</i> -----</li> <li>The student shows a correct process for finding the length of the window, such as: <math>144 \div 8 = 18</math>, <math>8 \times 18 = 144</math>, or other valid work.</li> </ul>	<ul style="list-style-type: none"> <li>The student gives the correct answer, 18 feet, and no work is shown. ----- <i>or</i> -----</li> <li>A correct process is started, but a computational error leads to an incorrect answer.</li> </ul>	<ul style="list-style-type: none"> <li>Makes no attempt or answers incorrectly.</li> </ul>
<b>T3</b> <b>Trait 3</b> 4.OA.4 (Q3)		<ul style="list-style-type: none"> <li>The student gives the correct answer, 8 feet and 12 feet. (NOTE: Values can be placed as either length or width.) ----- <i>and</i> -----</li> <li>The student shows a correct process for finding the length and width of the 96-square-inch window, such as: <math>8 \times 12 = 96</math>, <math>2(8 + 12) = 40</math>, or other valid work.</li> </ul>	<ul style="list-style-type: none"> <li>The student gives the correct answer, 8 feet and 12 feet. ----- <i>and</i> -----</li> <li>Key components are missing, such as not setting up one of the equations.</li> </ul>	<ul style="list-style-type: none"> <li>The student gives the correct answer, 8 feet and 12 feet, and no work is shown. ----- <i>or</i> -----</li> <li>A correct process is started, but a computational error leads to an incorrect answer. ----- <i>or</i> -----</li> <li>The student gives dimensions that do not add up to 40 feet such as 24 feet and 4 feet.</li> </ul>	<ul style="list-style-type: none"> <li>Makes no attempt or answers incorrectly.</li> </ul>
<b>T4</b> <b>Trait 4</b> 4.NBT.5 (Q4)		<ul style="list-style-type: none"> <li>The student gives the correct answer, 2,592 square inches. ----- <i>and</i> -----</li> <li>The student shows a correct process for finding the area of the window, such as: <math>4 \times 12 = 48</math>, and <math>48 \times 54 = 2,592</math>; or an array, an area model, or an equivalent equation or representation.</li> </ul>	<ul style="list-style-type: none"> <li>The student gives the correct answer, 2,592 square inches. ----- <i>and</i> -----</li> <li>Key components are missing, such as not showing where the 48 inches came from. ----- <i>or</i> -----</li> <li>A correct process is started, such as converting 4 feet to 48 inches but a computational error in the process that follows leads to an incorrect answer.</li> </ul>	<ul style="list-style-type: none"> <li>The student gives the correct answer, 2,592 square inches, and no work is shown. ----- <i>or</i> -----</li> <li>A correct process is started, but a computational error leads to an incorrect answer. ----- <i>or</i> -----</li> <li>The correct perimeter is found: 204 inches.</li> </ul>	<ul style="list-style-type: none"> <li>Makes no attempt or answers incorrectly.</li> </ul>
<b>T5</b> <b>Trait 5</b> 4.OA.5 (Q5a, Q5b, Q5c)	<ul style="list-style-type: none"> <li>The student gives the correct areas; 80 square inches, 99 square inches, and 120 square inches. ----- <i>and</i> -----</li> <li>The student gives the correct area, 528 square inches. ----- <i>and</i> -----</li> <li>The student gives a correct explanation, such as: "The area of the rectangular window is always one less than the area of the square window," or other valid explanation.</li> </ul>	<ul style="list-style-type: none"> <li>The student gives the 3 correct areas: 80 square inches, 99 square inches, and 120 square inches. ----- <i>and</i> -----</li> <li>The student gives the correct area, 528 square inches. ----- <i>or</i> -----</li> <li>The student identifies the correct pattern and gives a correct explanation, without calculating the actual area.</li> </ul>	<ul style="list-style-type: none"> <li>The student gives any 2 correct areas. ----- <i>and</i> -----</li> <li>The student gives the correct area, 528 square inches. ----- <i>or</i> -----</li> <li>The student identifies the correct pattern and gives a correct explanation, but relies on the actual calculation for the explanation. ----- <i>or</i> -----</li> <li>The student gives the 3 correct areas and nothing else is correct.</li> </ul>	<ul style="list-style-type: none"> <li>The student gives 1 correct area or no correct areas, but there is a pattern. ----- <i>or</i> -----</li> <li>The student gives the correct area, 528 square inches. ----- <i>or</i> -----</li> <li>The student identifies the correct pattern and gives a correct explanation, but does it by calculating the actual area.</li> </ul>	<ul style="list-style-type: none"> <li>Makes no attempt or answers incorrectly.</li> </ul>

	4 Points	3 Points	2 Points	1 Point	0 Points
<b>T6</b> Trait 6 4.MD.2 (Q6)			<ul style="list-style-type: none"> <li>The student gives the correct answer, \$19.10. (Accept 1,910¢ as correct answer).</li> <li>----- <i>and</i> -----</li> <li>The student shows a correct process for finding the cost of the glass, such as:  <math>64 \times 0.20 + 63 \times 0.10 = 12.80 + 6.30 = 19.10</math>, or other valid work.</li> </ul>	<ul style="list-style-type: none"> <li>The student gives the correct answer, \$19.10 (accept 1,910¢ as a correct answer), and does not show work.</li> <li>----- <i>or</i> -----</li> <li>A correct process is started, but a computational error leads to an incorrect answer.</li> </ul>	<ul style="list-style-type: none"> <li>Makes no attempt or answers incorrectly.</li> </ul>
<b>T7</b> Trait 7 4.OA.3 (Q7)			<ul style="list-style-type: none"> <li>The student gives a correct explanation, such as: "A little more than 40 windows can be made: <math>7 \times 40 = 280</math>, and she has 290 square inches. There are 10 square inches more glass, so 41 windows can be made," or other valid explanation as long as estimation is used to show that Wendy's thinking is incorrect.</li> </ul>	<ul style="list-style-type: none"> <li>The student uses estimation to show that Wendy's thinking is incorrect. However, the explanation has misconceptions and/or mathematical errors.</li> <li>----- <i>or</i> -----</li> <li>The student uses exact calculations to show that Wendy's thinking is incorrect.</li> </ul>	<ul style="list-style-type: none"> <li>Makes no attempt or answers incorrectly.</li> </ul>

**Level 4**  
**Exceeding Standards**  
 15 - 18 points

Student demonstrates deep understanding of applying the four operations to solving problems with whole numbers (**all questions**). Student multiplies and divides with one- and two-digit numbers (**all questions**). Student is comfortable with factors and multiples (**Q3**) and uses estimation to check the reasonableness of results (**Q7**). Student can generate and analyze patterns (**Q5b, Q5c**). Student makes comparisons between quantities, additive and multiplicative (**Q1**).

Student's response meets the demands of nearly all of the tasks as defined by the Common Core standards, with few or no errors. Student's response shows a deep understanding of the problem. Student is able to build a logical progression of statements to explain thinking (**Q5c**). Student's response routinely interprets mathematical results in the context of the situation (**all questions**). The communication is clear (**all work shown for all questions**). All of the steps are included so that the reader does not need to infer how and why decisions are made (**all work shown for all questions**). Mathematical representation is actively used to communicate the solution to the problem. There is precise and appropriate use of mathematical terminology and notation (**all work shown for all questions**). Student often discerns patterns or structures and makes connections between quantities and representations.

**Level 3**  
**Meeting Standards**  
 10 - 14 points

Student demonstrates understanding of applying the four operations to solving problems with whole numbers. Student makes a good attempt at multiplying and dividing with one- and two-digit numbers. Student tries to find all factors of a number. Student uses estimation, but may round after calculating. Student can generate patterns and attempts to apply this in problem solving. Student makes comparisons between quantities. Minor errors occur.

Student's response meets the demands of nearly all of the tasks as defined by the Common Core standards, with few errors. For most of the task, student's response shows broad understanding of the problem and the major concepts necessary for a solution. Student explains the problem and describes the solution path. Effective mathematical reasoning is used. There is a sufficiently clear communication to be able to follow reasoning. There is appropriate use of accurate mathematical representation. There is effective use of mathematical terminology and notation. Student makes sense of quantities and their relationships in the problem situations. Student might notice patterns or structures and make connections between quantities and representations.

**Level 2**  
**Approaching Standards**  
 5 - 9 points

Student is only able to be successful on part of the performance task. Student is likely to calculate quantities, but may have difficulty finding factors. Student may struggle with applying estimation to check the reasonableness of results. Student may have trouble either generating or analyzing patterns. Student can apply either additive or multiplicative comparison, but not both.

Student's response shows some of the elements of performance that the tasks demand and some signs of a coherent approach to problem solving as defined by the Common Core standards. Student uses a strategy that is partially useful, leading some of the way to a solution. The solution is not complete. The solution addresses some but not all of the mathematical components in the task. Some evidence of mathematical reasoning is evident. Some parts of the work may be correct. There is an incomplete explanation, or it may not be clearly presented. There is some use of appropriate mathematical representation. There is some use of mathematical terminology and notation that is appropriate to the problem. Student may recognize some patterns or structures, but does not yet generalize or use them to solve the problem.

**Level 1**  
**Attempting Standards**  
 0 - 4 points

Student demonstrates minimal success on the task. There are some attempts, but complete work does not exist. Student is likely to calculate quantities, but struggles with problem solving and using two-step equations. Student struggles with reasoning and explaining his/her work.

Student's response shows a few of the elements of performance that the tasks demand as defined by the Common Core standards. However, the misconceptions are substantial and require further instruction. There is no solution, or the solution has no relationship to the task. There is hardly any evidence of a strategy or procedure. There is hardly any evidence of mathematical reasoning. There are many errors in mathematical procedures. Lack of communication makes it difficult to follow student's reasoning, or it is unrelated to the problem. There is no use, or inappropriate use, of mathematical representation, mathematical terminology, and notation. Student is not yet recognizing patterns or the structure of the problem situation.

<sup>†</sup>This notation identifies the questions that relate to the holistic rubric criteria.